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RAW SEQUENCE LISTING

DATE: 11/19/2001

PATENT APPLICATION: US/09/987,457

TIME: 11:06:14

Input Set : A:\seqlist_0652 2180001.txt

Output Set: N:\CRF3\11192001\I987457.raw

ENTERED

5 <110> APPLICANT: Manosroi, Aranya
6 Manosroi, Jiradej
7 Tayapiwatana, Chatchai
8 Goetz, Friedrich
9 Werner, Rolf-Guenther

11 <120> TITLE OF INVENTION: Methods for Large Scale Protein Production in Prokaryotes
13 <130> FILE REFERENCE: 0652.2180001

C--> 15 <140> CURRENT APPLICATION NUMBER: US/09/987,457
C--> 16 <141> CURRENT FILING DATE: 2001-11-14

18 <150> PRIOR APPLICATION NUMBER: 60/268,573
19 <151> PRIOR FILING DATE: 2001-02-15
21 <150> PRIOR APPLICATION NUMBER: GB 00 27 782.2
22 <151> PRIOR FILING DATE: 2000-11-14
24 <160> NUMBER OF SEQ ID NOS: 18
26 <170> SOFTWARE: PatentIn Ver. 2.1
28 <210> SEQ ID NO: 1
29 <211> LENGTH: 66
30 <212> TYPE: DNA
31 <213> ORGANISM: Escherichia coli
33 <400> SEQUENCE: 1
34 atgaaaaaga cagctatcgc gattgcagtg gcactggctg gtttcgctac cgtggcccag 60
35 gcggcc 66

38 <210> SEQ ID NO: 2
39 <211> LENGTH: 4
40 <212> TYPE: PRT
41 <213> ORGANISM: Artificial Sequence
43 <220> FEATURE:
44 <223> OTHER INFORMATION: Description of Artificial Sequence: N-terminal
45 part of K2S molecule
47 <400> SEQUENCE: 2
48 Ser Glu Gly Asn
49 1

52 <210> SEQ ID NO: 3
53 <211> LENGTH: 6
54 <212> TYPE: PRT
55 <213> ORGANISM: Artificial Sequence
57 <220> FEATURE:
58 <223> OTHER INFORMATION: Description of Artificial Sequence: N-terminal
59 part of K2S molecule
61 <400> SEQUENCE: 3
62 Ser Glu Gly Asn Ser Asp
63 1 5

66 <210> SEQ ID NO: 4
67 <211> LENGTH: 12
68 <212> TYPE: DNA
69 <213> ORGANISM: Artificial Sequence
71 <220> FEATURE:

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72 <223> OTHER INFORMATION: Description of Artificial Sequence: coding
73     sequence of the N-terminal part of K2S molecule
75 <400> SEQUENCE: 4
76 tctgagggaa ac                                     12
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80 <211> LENGTH: 18
81 <212> TYPE: DNA
82 <213> ORGANISM: Artificial Sequence
84 <220> FEATURE:
85 <223> OTHER INFORMATION: Description of Artificial Sequence: coding
86     sequence of the N-terminal part of K2S molecule
88 <400> SEQUENCE: 5
89 tctgagggaa acagtgac                               18
92 <210> SEQ ID NO: 6
93 <211> LENGTH: 42
94 <212> TYPE: DNA
95 <213> ORGANISM: Artificial Sequence
97 <220> FEATURE:
98 <223> OTHER INFORMATION: Description of Artificial Sequence: oligonucleotide
99     sequence
101 <400> SEQUENCE: 6
102 gaggaggagg tggcccaggc ggcctctgag ggaaacagtg ac   42
105 <210> SEQ ID NO: 7
106 <211> LENGTH: 42
107 <212> TYPE: DNA
108 <213> ORGANISM: Artificial Sequence
110 <220> FEATURE:
111 <223> OTHER INFORMATION: Description of Artificial Sequence: oligonucleotide
112     sequence
114 <400> SEQUENCE: 7
115 gaggaggagc tggccggcct ggcccggctc catgttgtca cg   42
118 <210> SEQ ID NO: 8
119 <211> LENGTH: 26
120 <212> TYPE: DNA
121 <213> ORGANISM: Artificial Sequence
123 <220> FEATURE:
124 <223> OTHER INFORMATION: Description of Artificial Sequence: oligonucleotide
125     sequence
127 <400> SEQUENCE: 8
128 acatgcgacc gtgacaggcc ggccag                     26
131 <210> SEQ ID NO: 9
132 <211> LENGTH: 26
133 <212> TYPE: DNA
134 <213> ORGANISM: Artificial Sequence
136 <220> FEATURE:
137 <223> OTHER INFORMATION: Description of Artificial Sequence: oligonucleotide
138     sequence
140 <400> SEQUENCE: 9
141 ctggccggcc tgtcacggtc gcatgt                     26

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146 <212> TYPE: PRT
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149 <220> FEATURE:
150 <223> OTHER INFORMATION: Description of Artificial Sequence: part of the
151      recombinant K2S molecule
153 <400> SEQUENCE: 10
154 Ser Glu Gly Asn Ser Asp Cys Tyr Phe Gly Asn Gly Ser Ala Tyr Arg
155   1          5          10          15
157 Gly Thr His Ser Leu Thr Glu Ser Gly Ala Ser Cys Leu Pro Trp Asn
158          20          25          30
160 Ser Met Ile Leu Ile Gly Lys Val Tyr Thr Ala Gln Asn Pro Ser Ala
161          35          40          45
163 Gln Ala Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Gly
164          50          55          60
166 Asp Ala Lys Pro Trp Cys His Val Leu Lys Asn Arg Arg Leu Thr Trp
167  65          70          75          80
169 Glu Tyr Cys Asp Val Pro Ser Cys Ser Thr Cys Gly Leu Arg Gln Tyr
170          85          90          95
172 Ser Gln Pro Gln Phe Arg Ile Lys Gly Gly Leu Phe Ala Asp Ile Ala
173          100         105         110
175 Ser His Pro Trp Gln Ala Ala Ile Phe Ala Lys His Arg Arg Ser Pro
176          115         120         125
178 Gly Glu Arg Phe Leu Cys Gly Gly Ile Leu Ile Ser Ser Cys Trp Ile
179          130         135         140
181 Leu Ser Ala Ala His Cys Phe Gln Glu Arg Phe Pro Pro His His Leu
182 145         150         155         160
184 Thr Val Ile Leu Gly Arg Thr Tyr Arg Val Val Pro Gly Glu Glu Glu
185          165         170         175
187 Gln Lys Phe Glu Val Glu Lys Tyr Ile Val His Lys Glu Phe Asp Asp
188          180         185         190
190 Asp Thr Tyr Asp Asn Asp Ile Ala Leu Leu Gln Leu Lys Ser Asp Ser
191          195         200         205
193 Ser Arg Cys Ala Gln Glu Ser Ser Val Val Arg Thr Val Cys Leu Pro
194          210         215         220
196 Pro Ala Asp Leu Gln Leu Pro Asp Trp Thr Glu Cys Glu Leu Ser Gly
197 225         230         235         240
199 Tyr Gly Lys His Glu Ala Leu Ser Pro Phe Tyr Ser Glu Arg Leu Lys
200          245         250         255
202 Glu Ala His Val Arg Leu Tyr Pro Ser Ser Arg Cys Thr Ser Gln His
203          260         265         270
205 Leu Leu Asn Arg Thr Val Thr Asp Asn Met Leu Cys Ala Gly Asp Thr
206          275         280         285
208 Arg Ser Gly Gly Pro Gln Ala Asn Leu His Asp Ala Cys Gln Gly Asp
209          290         295         300
211 Ser Gly Gly Pro Leu Val Cys Leu Asn Asp Gly Arg Met Thr Leu Val
212 305         310         315         320
214 Gly Ile Ile Ser Trp Gly Leu Gly Cys Gly Gln Lys Asp Val Pro Gly

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215          325          330          335
217 Val Tyr Thr Lys Val Thr Asn Tyr Leu Asp Trp Ile Arg Asp Asn Met
218          340          345          350
220 Arg Pro
224 <210> SEQ ID NO: 11
225 <211> LENGTH: 331
226 <212> TYPE: PRT
227 <213> ORGANISM: Artificial Sequence
229 <220> FEATURE:
230 <223> OTHER INFORMATION: Description of Artificial Sequence: part of the
231 recombinant K2S molecule
233 <400> SEQUENCE: 11
234 Ser Gly Ala Ser Cys Leu Pro Trp Asn Ser Met Ile Leu Ile Gly Lys
235 1 5 10 15
237 Val Tyr Thr Ala Gln Asn Pro Ser Ala Gln Ala Leu Gly Leu Gly Lys
238 20 25 30
240 His Asn Tyr Cys Arg Asn Pro Asp Gly Asp Ala Lys Pro Trp Cys His
241 35 40 45
243 Val Leu Lys Asn Arg Arg Leu Thr Trp Glu Tyr Cys Asp Val Pro Ser
244 50 55 60
246 Cys Ser Thr Cys Gly Leu Arg Gln Tyr Ser Gln Pro Gln Phe Arg Ile
247 65 70 75 80
249 Lys Gly Gly Leu Phe Ala Asp Ile Ala Ser His Pro Trp Gln Ala Ala
250 85 90 95
252 Ile Phe Ala Lys His Arg Arg Ser Pro Gly Glu Arg Phe Leu Cys Gly
253 100 105 110
255 Gly Ile Leu Ile Ser Ser Cys Trp Ile Leu Ser Ala Ala His Cys Phe
256 115 120 125
258 Gln Glu Arg Phe Pro Pro His His Leu Thr Val Ile Leu Gly Arg Thr
259 130 135 140
261 Tyr Arg Val Val Pro Gly Glu Glu Gln Lys Phe Glu Val Glu Lys
262 145 150 155 160
264 Tyr Ile Val His Lys Glu Phe Asp Asp Asp Thr Tyr Asp Asn Asp Ile
265 165 170 175
267 Ala Leu Leu Gln Leu Lys Ser Asp Ser Ser Arg Cys Ala Gln Glu Ser
268 180 185 190
270 Ser Val Val Arg Thr Val Cys Leu Pro Pro Ala Asp Leu Gln Leu Pro
271 195 200 205
273 Asp Trp Thr Glu Cys Glu Leu Ser Gly Tyr Gly Lys His Glu Ala Leu
274 210 215 220
276 Ser Pro Phe Tyr Ser Glu Arg Leu Lys Glu Ala His Val Arg Leu Tyr
277 225 230 235 240
279 Pro Ser Ser Arg Cys Thr Ser Gln His Leu Leu Asn Arg Thr Val Thr
280 245 250 255
282 Asp Asn Met Leu Cys Ala Gly Asp Thr Arg Ser Gly Gly Pro Gln Ala
283 260 265 270
285 Asn Leu His Asp Ala Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys
286 275 280 285
288 Leu Asn Asp Gly Arg Met Thr Leu Val Gly Ile Ile Ser Trp Gly Leu

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289      290      295      300
291 Gly Cys Gly Gln Lys Asp Val Pro Gly Val Tyr Thr Lys Val Thr Asn
292 305      310      315      320
294 Tyr Leu Asp Trp Ile Arg Asp Asn Met Arg Pro
295      325      330
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299 <211> LENGTH: 339
300 <212> TYPE: PRT
301 <213> ORGANISM: Artificial Sequence
303 <220> FEATURE:
304 <223> OTHER INFORMATION: Description of Artificial Sequence: part of the
305      recombinant K2S molecule (modified)
307 <400> SEQUENCE: 12
308 Ser Glu Gly Asn Ser Leu Thr Glu Ser Gly Ala Ser Cys Leu Pro Trp
309 1      5      10      15
311 Asn Ser Met Ile Leu Ile Gly Lys Val Tyr Thr Ala Gln Asn Pro Ser
312      20      25      30
314 Ala Gln Ala Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp
315      35      40      45
317 Gly Asp Ala Lys Pro Trp Cys His Val Leu Lys Asn Arg Arg Leu Thr
318      50      55      60
320 Trp Glu Tyr Cys Asp Val Pro Ser Cys Ser Thr Cys Gly Leu Arg Gln
321 65      70      75      80
323 Tyr Ser Gln Pro Gln Phe Arg Ile Lys Gly Gly Leu Phe Ala Asp Ile
324      85      90      95
326 Ala Ser His Pro Trp Gln Ala Ala Ile Phe Ala Lys His Arg Arg Ser
327      100      105      110
329 Pro Gly Glu Arg Phe Leu Cys Gly Gly Ile Leu Ile Ser Ser Cys Trp
330      115      120      125
332 Ile Leu Ser Ala Ala His Cys Phe Gln Glu Arg Phe Pro Pro His His
333      130      135      140
335 Leu Thr Val Ile Leu Gly Arg Thr Tyr Arg Val Val Pro Gly Glu Glu
336 145      150      155      160
338 Glu Gln Lys Phe Glu Val Glu Lys Tyr Ile Val His Lys Glu Phe Asp
339      165      170      175
341 Asp Asp Thr Tyr Asp Asn Asp Ile Ala Leu Leu Gln Leu Lys Ser Asp
342      180      185      190
344 Ser Ser Arg Cys Ala Gln Glu Ser Ser Val Val Arg Thr Val Cys Leu
345      195      200      205
347 Pro Pro Ala Asp Leu Gln Leu Pro Asp Trp Thr Glu Cys Glu Leu Ser
348      210      215      220
350 Gly Tyr Gly Lys His Glu Ala Leu Ser Pro Phe Tyr Ser Glu Arg Leu
351 225      230      235      240
353 Lys Glu Ala His Val Arg Leu Tyr Pro Ser Ser Arg Cys Thr Ser Gln
354      245      250      255
356 His Leu Leu Asn Arg Thr Val Thr Asp Asn Met Leu Cys Ala Gly Asp
357      260      265      270
359 Thr Arg Ser Gly Gly Pro Gln Ala Asn Leu His Asp Ala Cys Gln Gly
360      275      280      285

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VERIFICATION SUMMARY

DATE: 11/19/2001

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Input Set : A:\seqlist_0652 2180001.txt

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L:15 M:270 C: Current Application Number differs, Replaced Application Number

L:16 M:271 C: Current Filing Date differs, Replaced Current Filing Date